11 January 1983

MEMORANDUM FOR: Chief, Resources Branch, RTC/ASG/CPAS

FROM: Chief, Word Processing Branch, ED/ODP

SUBJECT: Response to DDI Memorandum on Wang Evaluation

REFERENCE: Memorandum dated 2 December 1982, for Chief, Resource and
                 Technology Center from Chief, Resources Branch on Wang
                 Exploitation

1. The referenced document contains a number of misconceptions about the
capabilities and the procurement and installation of the Wang word processing
systems that are now being ordered through ODP as the Agency standard. I have
commented on these inaccuracies in Attachment A.

2. The benefits expected from adopting an Agency standard word processing
system(s) are as follows:

    a) Agency-wide Interconnectivity –
        Most significantly, an Agency standard will permit the
        development of an Agency-wide office automation system with all
        Agency work stations interconnected through the ODP mainframes
        so that any Agency component would be able to transfer files to
        any other Agency componet. With such a network, electronic
        mail, distributed processing and other state-of-the-art data
        communications systems would be possible. The QDP development
        to convert Wang System files to VM SCRIPT files is scheduled for
        completion by 1 March 1983. The development of the VM SCRIPT to
        Wang capability is scheduled for completion 15 June 1983. ODP
        also plans to interface the Wang Systems with the ODP AIM
        electronic mail system.

    b) Dedicated vendor personnel –
        Establishing a contract with one vendor allows the Agency to
        specify its own requirements for vendor services. In the
        present contract with Wang Labs, the Agency specified the need
        for dedicated personnel so that the anticipated large volumes of
        equipment could be properly maintained and supported in a timely
        manner. Dedicated Wang personnel currently supporting the
        ODP/Wang contract are as follows:

        1) 11 Customer Engineers (On site C.E.'s permitted the
            response time for the last monthly period to be 1.3
            hours – the contract specifies 2 hours)

2) 4 Customer Support Analysts (to be increased by 4 in the next quarter. The customer is entitled to 72 CSA hours for each Alliance System.)

3) 4 Training instructors (To be increased by 2 in the next quarter. Total Agency personnel trained on Wang Systems in the first six months of the contract was 542.)

4) 3 Marketing salespersons (Total work stations ordered on the first 6 months of the contract is 808 which is greater than the cumulative total of all other word processing vendors for all previous years.)

5) 1 C.E. Account Manager (Includes management of cabling subcontractors.)

6) 2 Senior Managers (Manage all aspects of contract.)

c) More efficient use of ODP development time –
By concentrating developments with one vendor, valuable development time is conserved, since duplication of developments on other vendor systems is prevented.

d) Establishment of a development program with the word processing vendor –
The ODP/Wang contract specifies that Wang must consider performing various developments requested by the Agency over the life of the Contract. In addition, Wang must provide proprietary software to the Agency in certain circumstances so that the Agency can perform their own developments.

e) Retraining of Agency personnel transferring across directorates is unnecessary –
All personnel requiring word processing skills will be trained on one vendor's system so that movement from one office to another will not require retraining on a different vendor's system.

f) Agency clearances can be secured for specific vendor personnel –
A long-term contract would allow the Agency to specify that certain contract personnel obtain Agency clearances for highly sensitive operations.

g) Market surveys by each componet are unnecessary –
The time spent by each componet in evaluating all of the word processing systems in the marketplace is saved since this evaluation is made once by a team of experts during the Request-for Proposal process.

h) Control of vendor responsiveness through the contract –
A contract provides the leverage to demand responsiveness from the vendor for support services.

3. ODP management decided to pursue the establishment of an Agency standard word processing system(s) in 1981. A statement of work including functional requirements for four configurations of word processing systems was prepared by the Engineering Division in ODP. After competitive bidding, Wang Laboratories, Inc. was awarded the contract with ODP for the Agency standard word processing system(s). The ODP/Wang contract was signed on May 21, 1982. At this time ODP established the Word Processing Branch in the Engineering Division to manage the procurement, installation and maintenance of the Wang Systems. The Chief, WPB was appointed the Contracting Officer's Technical Representative (COTR) for the ODP/Wang contract. The Director of Data Processing delegated the approval authority for the procurement of the Agency standard word processing systems to Chief, WPB,ED/ODP. Disapprovals of Agency standard systems and approvals for non-standard word processing systems were delegated to the Chief, Engineering Division, ODP. Approvals for non-standard word processing systems will now be given by the Director of Data Processing.

4. The sensitive nature of Agency work dictates that the Agency standard word processor be Tempest certified. Wang is one of the few vendors that has a well-established program, which includes their own Tempest testing facilities, for the development of Tempest certified products. Wang also offered the Agency a very attractive price break for the systems that were proposed to satisfy the Agency requirements.

5. Since all word processing systems perform the various word processing functions somewhat differently, I am sure that you will find many functions on your Wang System that will not perform in the same manner as on your NBI word processor. Generally, a user will adapt to these differences over time, however, for those functions that persist in being an annoyance I would be happy to pursue the matter with Wang to see if there can be some resolution of the problem. (e.g., As has been pointed out by DDI personnel, the Wang System does not have an automatic pagination capability. This can be easily resolved by creating a Wang glossary (like a VM EXEC) to perform simple automatic pagination (like VM SCRIPT).) In addition ODP plans to provide some glossaries like this to Agency Alliance customers.   The Word Processing Branch intends to establish an Agency user group within the month to surface problems and additional requirements for the Wang Systems.

6. Although there may be some minor deficiencies in a few word processing functions on the Wang Alliance System when compared to the NBI, these should be weighed against some of the attractive and unique features that the Alliance offers. Although these may not presently be requirements in the DDI, I feel that the Word Search capability and the Spelling Verification package will be widely used among all Alliance users. Agency offices like those of the DDI which produce significant numbers of reports have long needed the capability to search the text of multiple reports. The Alliance Word Search capability provides text searching of a group of documents using a direct access indexing scheme so that the response time for the searching is very fast. Wang's Spelling Verification package, which checks for misspelled words in a document, should reduce the time now spent proofreading. Small scale data processing applications can also be implemented on the Alliance using the

Wang Visual Memory software (records management system), Alliance BASIC and Alliance CP/M. In other words, with only minor exceptions the Alliance System can perform all the word processing functions that an NBI can and, in addition, offer a rapid response text search capability plus data processing tools for a cost comparable to the NBI (when 5 or more work stations are procured).

7. I would like to request that you send me a draft copy of any further studies that you conduct on your Wang Alliance System for my comments. I appreciate the commitment that your directorate has made to evaluate the capabilities and procurement and installation of the Wang Alliance System and I am hopeful that I will be able to resolve any problems with the Alliance that you identify during your evaluation.

STAT

Chief, Word Processing Branch,
ED/ODP

ATTACHMENT A

COMMENTS ON DDI MEMORANDUM ON WANG EVALUATION

1.   The cover memo from Chief, ASG,   CPAS states "the
processing backlog in ODP is now six months for either (a Wang
7520 or an NBI)." There is no backlog in ODP for any word
processing equipment.   Requests are logged in and processing
begins as soon as the requests are received.   Orders will not
be cut, however, until the customer provides blueprints for
systems requiring cabling.   Currently, a customer can expect
to have his Wang System installed within sixty days of receipt
of order if a site survey has been made, and the request is in
order.   (The   request   is   checked   for   inaccuracies,
compatibility with blueprints, maintenance included for leased
equipment, etc..)   In the case of NBI's, processing is
somewhat longer because of the special approvals that must be
obtained for procuring non-standard word processing equipment.
Price verification of NBI options generally takes longer
because of the relative unavailability of NBI salespeople as
compared to the dedicated Wang marketing personnel.

2.   The referenced memo states that "the office was
seriously disrupted by the presence of several workers who
installed the cables.   The job was a messy one,   lending
further to the disruption."   Cabling requires drilling within
the ceilings and will be disruptive to personnel working in
the altered areas.   Arrangements can be made to install
cabling after hours and on weekends at overtime rates,
however, if the area is vaulted the customer office will have
to provide escorting in the vaulted areas.   Although the work
is by nature "messy", the subcontractors do clean and restore
the areas affected by the construction.

3.   The referenced memo states that "over three months
elapsed between the time we submitted our order to ODP and the
operational date.   ODP tells us that is the average time
required.   This   compares   with   an   average
procurement/installation time of 30 days for NBI word
processing systems."   DDI personnel changed the original
location intended for the Alliance CPU Master and disk drives
causing a five to six weeks' delay in the installation
process.   Pertinent dates are as follows: order date: 8
August 1982;   delivery date: 22 September 1982;   start of
cabling: 15 October 1982; cabling completed: 25 October
1982; system installed: 1 November 1982. (The DDI memo cites

17 November 1982 as the installation date. This is because CPAS personnel had not arranged for training until after 1 November 1982 and requested that system software not be loaded until 17 November 1982.) Item 1, above, addresses the ODP processing time. Procurement/ installation of NBI equipment now takes about 60-90 days since it is now categorized as Agency non-standard word processing equipment and as such must go through a time-consuming approval process.

4. The referenced memo states that "maximum separation (of terminals from the CPU) was 500 feet." Wang has now committed to a maximum separation of 1000 feet. Cabling between floors in the Agency headquarters building requires special approval from OC and OL.

5. The referenced memo states that "two (ports) are reserved for telecommunications interfaces . . . and two are reserved for software packages (like CP/M . . . ." Neither CP/M nor any Alliance software package requires a port. Each telecommunications board does require a port (the Alliance System can support two TC boards), however, ports are not reserved for TC boards. Thus, it is possible to configure an Alliance System with 24 terminals and eight printers, however, it is good system planning to limit the number of ports used initially to allow for expansion.

6. The referenced memo states that "one terminal must eventually be installed immediately adjacent to the CPU and disk drives." The system administrator can use any terminal for performing administrative tasks. However, for tasks, such as disk backup, the terminal should be reasonably close to the disks. This can be resolved by having the terminal closest to the Alliance CPU site on a moveable stand.

7. The referenced memo states that "the VM to Wang interface is under development, but it may take longer than anticipated." ODP has developed the module to convert Wang WPS documents to VM SCRIPT but have not yet developed a user friendly driving module. (ODP personnel have actually converted several high priority files for customers using the prototype system.) The development is now scheduled for completion by 1 March 1983.

8. The referenced memo states that "The attached cost comparison suggests the Wang might be more cost-effective for systems with seven or more workstations, etc." The Wang costs are much more attractive than the NBI costs when you consider that the Wang equipment is TEMPEST approved whereas the NBI equipment is not. (Tempest equipment is often 40 % to 100%

more expensive than the corresponding non-Tempest equipment.)

9.   The referenced memo states that "The system administrator's job could well become a full-time position for most DI offices." The Alliance System requires minimal support from a systems administrator if the system is only used for basic word processing (perhaps two to three days initially and one to two hours per week thereafter). Some Agency offices have assigned a dedicated support person to act as system administrator for four Alliance Systems.

10.   The referenced memo states that "The CPU and disk drives require approximately 100 square feet of space." The Wang workstation will fit on the sidearm of a standard government-issued desk, whereas each NBI workstation requires about 25 square feet of additional space. For ten NBI workstations this means an additional 250 square feet. The Wang Alliance Master with two disk drives can easily be housed in a 100 square foot room (which would provide sufficient space for ventilation and for the Wang customer engineers to perform maintenance on the equipment.) Ten Alliance workstations would require no additional space.

11.   The referenced memo states "The CPU and disk drives are too noisy for most office environments, so they require an isolated area.   .   .   .   The system cannot function in areas whose temperature is above 90 degrees, therefore require supplemental cooling." Ideally, the Alliance System should be located in a dedicated room (or a computer center if available) so that heat and noise would be of little consequence. If the system is located in an area with personnel, noise abatement partitions can be used and heat ducts can be installed by the Office of Logistics (as was done for the ODP/ED Alliance System). Areas whose temperature is above 90 degrees should be serviced by OL in any case.

12.   The referenced memo states "Word processing functions (and formatting) require more key strokes on the Wang than on the NBI." Wang designs their word processing systems to be user friendly and has a good record in this respect, however, there may be certain functions on the NBI that can be judged easier to use. The basic word processing functions are somewhat different from vendor to vendor. It is natural for users to prefer the operational idiosyncracies of the word processing system that they are more experienced with. However, these minor variations in the operation of basic functions are not good criteria to use for selecting one word processing system over another.

13. The referenced memo states that "sheet feeders are not available for the Wang." Sheet feeders will be available for Wang printers in May, 1983.

SFD

ROUTING AND RECORD SHEET

SUBJECT: (Optional)

DDI Evaluation of Wang

FROM:	EXTENSION	NO.
A-D/ODP 2D00 Headquarters		**DATE** 7 January 1983

TO: (Officer designation, room number, and building)	DATE RECEIVED	DATE FORWARDED	OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
1. DDA 7D18 Hqs.				Harry,
2.				Bruce asked me to share this with you. A second report that is coordinated with our Engineering Division should be out next week presenting a more balanced view. Gail will have more for you next week on this subject.
3.				
4.				
5.				
6.				
7.				
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9.				
10.				
11.				
12.				
13.				
14.				
15.				

FORM 1-79 610 USE PREVIOUS EDITIONS

23 December 1982   29 DEC 1982 D D 986

STAT

MEMORANDUM FOR:

FROM:

SUBJECT: DDI "Evaluation" of WANG

STAT

Bruce:
        I talked to [   ] yesterday, Wed Dec 22, about the
report. He told me the report had already gone out.

I told him that I considered it to be a very biased one
sided report. That I was very unhappy that no one in ED had
seen a copy in draft, and that no one had been asked to
verify the statements, several of which were wrong. Andrea
was at the meeting and agreed. He added that the DDI had
had 14 secretaries trained on the Wang, and that all
concluded that the Wang would not do the job for the DDI. He
said I had to understand that the DDI is different.
        I stated that I thought the study should be accurate
and should lay out both the costs or disadvantages of Wang
as well as the benefits of using the Wang. I said I had no
problem with DDI management making a valud judgement based
on accurate facts, but that I strongly objected to them
making a decision on a report such as was presented.
        ASG is planning another report due out 30 December. Ed
STAT [   ] said he would work with us on that report so that it
could correct the errors in the first report.
        Summary
        We have a problem.

STAT

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Distribution:

        - addressee
STAT

ODP-~~82-1896~~

17 DEC 1982

DD

MEMORANDUM FOR: See distribution list

STAT   FROM: _____

                    Chief, Analytic Support Group,CPAS

      SUBJET: Wang Evaluation Report

     1. Attached is an interim report on the Wang Alliance Office Automation System which is currently being evaluated by CPAS/ASG. A second phase evaluation report will be sent to you in February 1983.

     2. Based on the interim report, we recommend that DI offices not purchase or lease the Wang Alliance now. The Wang Alliance clearly has problems, as indicated in the report. The most serious problems are that it takes up space, is hot and noisy, and requires a full time support person. These problems will not be quickly solved.

     3. ASG is looking at alternative solutions to the DI requirement for communicating word processors. Meanwhile, we are continuing the Wang evaluation. In the interim, if your office has an urgent need for a stand alone word processor, we recommend that you order either a single Wang unit (not an Alliance) or an NBI word processor. You should be aware that the processing backlog in ODP is now six months for either type.

STAT

     Attachment:
      as stated

Distribution list:
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OFFICIAL USE ONLY

2 December 1982

MEMORANDUM FOR: Chief, Resource and Technology Center

FROM: Chief, Resources Branch

SUBJECT: Wang Exploitation

Introduction

The purpose of this memorandum is to report on and expand our 27 September plan for evaluating the Wang Office Automation System. In it we describe and assess the first phase of our plan, now complete, then present and comment on the four remaining phases. The ASG Applications Center is evaluating the Wang as a microcomputer system and will issue a report in April 1983.

Phase I

ILLEGIB

The first phase of our Wang testing was to include the following:

- Acquire and install a Wang Office Information System (the

- Train personnel who will be participating in the Wang evaluation.

- Assess the environmental impact of the Wang.

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OFFICIAL USE ONLY

The results of the first-phase tests are as follow:

Installation

An Alliance system was installed in 2G40 Headquarters on 17 November 1982. It included 12 terminals and 4 printers. The installation period covered about two weeks, during which time the office was seriously disrupted by the presence of several workers who installed the cables. The job was a messy one, lending further to the disruption.

Over three months elapsed between the time we submitted our order to the Office of Data Processing (ODP) and the operational date. ODP tells us that is the average time required. This compares with an average procurement/installation time of 30 days for NBI word processing systems.

As our Alliance was being installed, we learned several things about it that we hadn't know before:

ILLEGIB

- Terminal Separation. ODP told us that we could place terminals up to 1000 feet from the central processor unit (CPU). We later were told that the maximum separation was 500 feet. not 1000 feet. This matter could be very important to the DI if we begin installing Alliance systems in the many DI offices that are spread through several floors and at various corners of the building. ODP tells us they are working on a means of extending the maximum separation up to 1000 feet and should be successful about mid-1983.

During installation, we found that the system will support only 28. It seems two of the available connections are reserved for telecommunications interfaces (links to VM or other Alliances, for example), and two are reserved for software packages (like the CP/M package we are ordering for the Applications Center).

- System Terminal. One terminal must eventually be installed immediately adjacent to the CPU and disk drives. During maintenance and service operations—such as filing and system updates—the system administrator must monitor activities on both the CPU and a terminal.

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- **VM Interface.** The VM to Wang interface is under develop-
  ment, but it may take longer than anticipated. Initially,
  personnel will only be able to "dump" files into the VM sys-
  tem. ODP is currently engaged in an intensive upgrade ef-
  fort to allow data to be passed from a Wang network to the
  P&PD ETEC System. We anticipate that only one or two ASG
  Wang system users will be able to interface with the VM sys-
  tem at a time. The remainder must wait until one of the
  other users has completed his work session.

- **Cost.** The attached cost comparison suggests the Wang might
  be more cost effective for systems with seven or more works-
  tations, but less cost effective for systems with six or
  fewer workstations.

Training

Each Alliance requires a system administrator. System administrator
training consists of 6 1/2 working days. The system administrator's job
could well become a full-time position for most DI offices. We estimate
that it will take approximately six months for the systems administrator
to become comfortable with the system.

Environmental Impact

Now that we have an Alliance in our office we can comment on several en-
vironmental issues.

- Space. The CPU and disk drives require approximately 100

ILLEGIB

- **Noise.** The CPU and disk drives are too noisy for most of-
  fice environments, so they require an isolated area.

- **Heat.** The system cannot function in areas whose temperature
  is above 90 degrees, therefore may require supplemental
  cooling.

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Phase II

The second phase of testing, now underway, is scheduled to be completed
by 31 December 1982. It addresses the question of whether the Wang is
an adequate replacement for the NBI as a word processor and focuses on
the following:

- Basic system features.

- Keyboard configuration and comfort.

- Screen size.

- Printer speed and capability.

The second-phase testing will include the following:

- A comparison of the Wang and NBI basic word processing capa-
  bilities by the ASG. Kathy Huntley of the RTC will do most
  of this evaluation and will concentrate on the basic fea-
  tures common to both systems. Certain features of the Wang,
  characterized as advanced features and requiring advanced
  training, will not be tested. These features include word-
  in-text indexing, programming, and dictionary building.

- A comparison of the Wang and NBI systems by representatives
  from nine DDI offices (CPAS, SOVA, OEA, EURA, NESA, OGI,
  CRES, OSWR, and OCR). The representatives completed two
  days of word processing training in November. They will
  bring office typing material normally prepared on NBIs, to
  the ASG and prepare the material on the Wang. Participants
  will be asked to complete questionnaires on all aspects of
  the system as they do their typing. We expect each repre-
  sentative to spend several hours per week on the Wang.

- A detailed cost comparison between the Wang and the NBI.

- Several other offices are evaluating Wang systems, including
  ODP, DCD, OCR, and OSWR. We will solicit information from
  them as part of our evaluation.

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Preliminary results of our second-phase testing are as follow:

- Word processing functions require more key strokes on the Wang than on the NBI.

- Text disappears from the Wang screen when change or insert commands are used.

- Formatting requires more keystrokes on the Wang than on the NBI.

- Sheet feeders are not available for the Wang. Continuous feed paper is not an adequate substitute.

Phases III-V

Assuming the Wang is found to be an adequate replacement for the NBI for basic word processing, we will test additional Wang features as follows:

- Phase III. Evaluate advanced word processing and office automation features, including calendar, notebook, visual memory, advanced data manipulation features, and personal message exchange.

- Phase IV. Add terminals and printers to our system and evaluate its ability to respond when fully loaded.

- Phase V. Evaluate the system's ability to provide easy access to the VM and SAFE systems, and the adequacy of the Wang terminal as a VM and SAFE terminal.

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